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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/642,969	08/18/2003	Darius L. Crenshaw	TI-29906.1	3382
23494	7590	03/30/2005	EXAMINER	
TEXAS INSTRUMENTS INCORPORATED			NHU, DAVID	
P O BOX 655474, M/S 3999			ART UNIT	
DALLAS, TX 75265			PAPER NUMBER	
			2818	

DATE MAILED: 03/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/642,969

Applicant(s)

CRENSHAW ET AL.

Examiner

David Nhu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 March 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 1-11 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 12-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

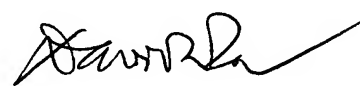
**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 09/941,031.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTIONS

### *Claims Objection*

1. *Claims 12-20, "a RF switch fabricated by a method of integrating a resistor in circuit with a bottom electrode of a micro-electromechanical switch on a substrate..." are rejected by a Product-by-Process claim. See MPEP 2113.*

### **Claim Rejections - 35 USC § 102**

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 12-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Linn et al (5,547,896).

**Regarding claim 12**, Linn, (see figures 1a-1f, 2a-2b, 3a-3b, col. 2, lines 59-67, col. 3, lines 1-67, col. 4, lines 1-67), teaches a RF switch fabricated by a method of integrating a resistor in circuit with a bottom electrode of a micro-electromechanical switch on a substrate 14, said method comprising the steps of: depositing a uniform layer of a resistor material 12 over at least one side of said substrate; depositing a uniform layer of a hard mask material 10 over said resistor material; depositing a uniform layer of a metal material 18 over said hard mask material, wherein said deposited layers form a stack 10, 12; patterning and etching a bottom electrode 18 and resistor lengths 12 from said stack; and etching said hard mask 10, 22 and metal material 18 from said patterned resistor lengths.

Regarding claims 13-20, Linn, (see figures 1-3, col. 1-6), also teach patterning and etching said deposited dielectric to correspond to said pattern bottom electrode and resistor lengths;

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wherein said resistor material comprises NiCr; etching acts comprises wet etching; the hard mask and metal material remain substantially covering said patterned bottom electrode subsequently to said etching said hard mask and material from said patterned resistor length; the metal material comprises aluminum – silicon; the anchor/hole/opening comprises silicon oxide.

### Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Liao'841, Mitchell'679, Tang'346 are cited as of interest.
5. A shortened statutory period for response to this action is set to expired 3 (three) months from the date of this letter. Failure to respond within the period for response will cause the application to become abandoned (see 710.02 (b)).
6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Nhu, (571)272-1792. The examiner can normally be reached on Monday-Friday from 7:30 AM to 5:00 PM. The examiner's supervisor, David Nelms can be reached on (571)272-1787.

*The fax phone number for the organization where this application or proceeding is assigned is (703)872-9306.*

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

*Information regarding the status of an application may be obtained from the patent application information retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR*

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*system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).*

David Nhu



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